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Forestry by Proclamation.

WHEN the act "to repeal the timber-culture law and for other purposes" passed Congress just as the session was closing on the 3d of March, 1891, it was not generally understood that the provisions of the bill "for other purposes" were a good deal more important even than those repealing the timber-culture laws, and that one section of the act invested the President with unprecedented power in regard to the future of the public domain. This is the now well-known provision empowering the President to set apart reservations of timber lands, and "to declare by proclamation the establishment of such reservations and the limits thereof." This law marked a distinct departure from the policy of the Government in relation to our public forests, but there is little reason to fear that it will be exercised against the public welfare, for the strongest pressure of local and pecuniary interests brought to bear upon the President will always be against the withdrawal of lands from sale. In less than four years seventeen reservations have already been proclaimed in nine states, and, altogether, they amount to more than 26,500 square miles, an area considerably more than half as large as the entire state of New York. All the selections seem to have been judiciously made; they insure the integrity of much scenery of great natural beauty and sublimity; they save many kinds of great game which are threatened with extinction; they ought to ensure a lasting timber supply in regions where it will be sorely needed, and, most of all, they protect the headwaters of some of our great rivers.

We have often called attention to the negligence of Congress in failing to provide systematic and efficient protection for this vast territory. As it now stands, these seventeen millions of acres have nothing but the President's proclamation to protect them from sheep-herders or timber-thieves, and it is well known that any one can plunder or burn them with little fear of punishment. Every attempt to enact a measure for the safety of these forest reserves has been defeated, and a force strong enough to defeat protective legislation is strong enough to guarantee impunity to trespassers. If there is not enough virtue in Congress to protect the forests already established, what would be the effect if the President should at once increase them by making proclamation to reserve the land about the headwaters of all our great western rivers wherever such land is now public? Would Congress be impelled to make greater haste in passing laws to protect these lands, or would the opposition to the reservations be increased by enlisting the support of additional local interests which might seem to be threatened?

These inquiries are suggested by an article in the current number of the *Review of Reviews*, by Mr. Robert U. Johnson, who argues that the delay of Congress in providing for the care of reservations does not relieve the President of responsibility for the delay in creating others. He adds:

> By one stroke of the pen the President can make a reservation, for instance, at the headwaters of the Missouri, which, without interfering with private rights, shall control for all time for the public the source of that great stream. The country would not fail to greet with favor a well-considered scheme for similar tracts in the entire west. Such action would be an honorable challenge to the patriotism and good sense of Congress, qualities which are never found wanting in a crisis, and the necessary legislation for the patrol and care of these reservations would be all the surer to follow, by reason of the magnitude of the beneficent scheme.

In one of the early issues of this journal it was proposed that Congress should withdraw from sale all forest-land until a commission of competent men should report on their extent and value, and designate such portions as should be forever kept in forest to insure a full and equable water-supply for our great rivers. If this plan had been adopted a scheme would have been formulated long before this, mapping out the permanent forest and giving reasons for the boundaries laid down. It may well be questioned, however, whether under the act of 1891 the President would be justified in any such sweeping proclamation as is now contemplated. The act was not passed with any such object in view, and it is not improbable that such an exercise of power would excite hostility which would ultimately destroy the whole scheme. Forest-protection, though it may come late, will come at last, when there is a thoroughly enlightened public opinion on the subject, which will insist on expressing itself in law. Neither the people nor their representatives can be driven to this wise work by any Presidential proclamation. The logical course is to make sure of protecting what we already have before attempting to take the entire public forest-lands by proclamation. There are certain mountain regions which palpably ought to be reserved, and which the President could at once establish with the approval of almost the whole country. But before any proclamation is made which embraces in its scope the "entire west," there ought to be a great deal of study in selecting locations and fixing boundaries. Under the law a "stroke of the President's pen" establishes the condition of these reservations forever, and surely the word which fixes the boundaries of the nation's forests and makes them permanent and final, ought not to be hastily written or spoken.

As soon as possible after the falling of the leaves the professional tree trimmer begins to practice his rude surgery on street-trees, and he keeps it up as long as he can find remunerative employment. Almost exactly two years ago a row of fine Norway Maples, standing in a neighboring city, were mutilated in this way beyond all hope of recovery, and hardly two blocks from the remains of these trees a butchery of the same sort is going on as we write. These professionals approach the owner of some city lots, and their elaborate apparatus of ladders, ropes and saws impress him with a sense of their superiority as experts in their art. The man himself knows nothing about trees, and, probably, cannot even give the correct name of a single tree which stands in front of his door, and he is easily persuaded that, unless his trees are pruned, they will soon die, or be worthless. What these journeymen do to a young thrifty tree is to cut off all its large limbs to

within three or four feet of the point where they separate from the trunk, and then the branches still remaining on these limbs are sawed off so as to leave stubs a few inches long. The result is, that what was once a Norway Maple, for example, with a symmetrical top and a trunk some twelve or fifteen inches in diameter, is left a mutilated stump, with a score of raw wounds to invite spores of fungi of various kinds, which will certainly kill the tree in time. It will linger on a few years, an unsightly and misshapen object, ruined by the mistaken kindness of persons whose purpose was to add to its beauty and insure its longevity.

Now, no trees need systematic pruning as much as street-trees. They need to be kept to a certain shape, and in many cases they ought never to be allowed to grow beyond a certain size. But street-trees will never be pruned properly unless the men who do the work are directed by some one with knowledge and experience. It is of little avail to complain that this work is done badly so long as every man is permitted to treat the trees in front of his own lots as he chooses, for it is too much to hope that the great mass of the dwellers in our cities will ever know enough about trees and their habits to care for them properly. The only safe course, as we have insisted before, is to place the street-trees of every city and town under the charge of some competent official. We mean by this not only that some man should be named to superintend the pruning, but that the whole work of planting and subsequent care should be put under his control. This official should not only know enough to select the proper varieties, but he should know how to plant the trees so that they will make an even and symmetrical growth, and how to keep them properly pruned and protected from the attacks of disease and insects and animals. But the care should begin still farther back, that is in the nursery itself, and if there were a competent commission in every city as there is in Washington, to conduct the nursery, it would be all the better. Every one of a row of street-trees should be a perfect specimen, and all should be of uniform size and shape. If a city controlled its own nurseries this essential could be more easily secured. But, in any case, no street-tree should be planted until it has passed the most rigid inspection. Even if the work has been done in the best manner possible from the very beginning, the trees in the city will need constant supervision as they grow. They are surrounded by a hundred dangers here which never threaten them in the open country. But, after all, they have no more dangerous enemy than the men who have equipped themselves to prune them by the job, for they come in the garb of protectors, and the ignorant and unwary are actually induced to pay them for destroying what they profess to save.

Imagination in Gardening.

THERE is no doubt that in our day landscape-gardening is occasionally carried to a greater degree of perfection than ever before. The great park systems of some of our cities are without rivals in the Old World, and there are private grounds here where true artistic feeling in composition is expressed by most exquisite arrangements, and a truly artistic sense of the requirements of the situation. But there is a question whether most of the private gardens nowadays are constructed with the same sense of the picturesque which used to make English gardens the expression of their owners' individuality. Those gardens were, and, no doubt, often still are, whimsical, but they meant something; and even their mistakes showed a healthy sort of interest in the subject, and in the disposition of their treasures there was a care beyond what is mechanical and perfunctory, and something better than a mere imitation of their neighbors.

Italian gardens, with all their formality, still retain that imaginative charm. There is an expression of stateliness, of mystery, of classic grace about them that makes the forlornest of them interesting to this day. The mossy fountains crumbling to decay, the rows of feathery Cypresses, the cool thickets of Ilex, in which the nightingales sing even at noonday, the resting-places from which are glimpses of scenery, all suggest the planning of those pleasure-grounds by and for those who were true lovers of nature, and to whom the garden was a frequent resort and a continuous joy. The same is true of French gardens, where the imagination is governed by the restraints of that Gallic taste which pervades most things of a decorative kind constructed by that keenly perceptive people. Even the Dutch gardens are expressive, if not of the imagination of the Netherlanders, at least of their most marked characteristics—orderliness, practicality, straightforwardness and simplicity.

In England there may be a want of taste, but never a lack of imagination, and here we have constant evidence of the delight taken by men of eminence in statecraft and letters in the construction of ingenious gardens, which were intended at least to express their owners' ideas of the picturesque. Queer enough some of those ideas may have been, and, where the wealth of the proprietor permitted, imagination too often ran riot and admitted monstrosities into the scheme; but at bottom, the idea that a garden should be an individual expression, even of an owner's whim, was not a bad one, since through reckless experiment one sometimes arrives at a great truth. Certainly it was a thousand times more hopeful a symptom than the senseless repetition and imitation from which one suffers in many would-be magnificent places in our own country. In the grotesque conceptions of the eighteenth century there was at least a struggling idea, while in the monotonous and constantly recurring arrangements which we too often see now, no idea whatever enters, except to be conventional.

It is possible that the lack of a leisure class in this country may account for a good deal of this monotony in our large places. Still there are more men here than one would suspect who care something about gardens, and who are willing to give them some time and attention. But this interest rarely becomes strong enough to excite any original thinking, and comparatively few men have any conception that there is such a thing as a possible picture in every plot of ground, with a definite meaning in the mind of its creator. In Europe there is a certain traditionary art in planting which has descended through succeeding ages, and some of this came to these shores with our forefathers, so that the early gardens of America bore its impression more than do those of the present day, which for the most part are mere collections of more or less curious and beautiful plants. It was the element of fancy which made the old gardens beautiful and dear, so that to this day they retain their charm, even if their fashion has passed away. They exhale the aroma of the imagination which created them and so retain a perennial hold upon us. Even the grottoes and the statues which we now condemn seem no more out of place in an eighteenth-century garden than the quaintnesses in the literary style of the epoch. The essential thing is to have some ideal and some mode of expressing it, a style which is our own and not that of our fathers or grandfathers—and, above all, not that of our neighbors. When we once have a style the perfecting of it is but a matter of time and study and adaptation to our changing circumstances.

The genius of Lord Bacon did not disdain to concern itself with the reformation of national taste in England in the matter of gardens, and he wisely suggested winter or evergreen gardens, and the preservation of rude and neglected spots as specimens of wild nature, and though in his day that suggestion did not bear much fruit, it, no doubt, opened the minds of his readers to new light upon this important topic; so that when in the reign of Charles the Second the genius of Le Nôtre began to make itself felt in France, there were thinking men in England ready to comprehend his rare ability, and the King himself sum-

moned him to lay out Greenwich and St. James Parks. Charles also added the semicircle to Wolsey's Hampton Court, so stately to this day with its broad terraces and fountains and gay parterres of flowers; and in his reign the gentle Evelyn gave a tremendous impulse to picturesque gardening by his own work, and by his appreciation of what was being done by kindred spirits about him. "Two mummies and a grot," which he found at Bushnell's Wells, at Enstone, scarcely correspond to modern ideas of garden decoration, but here the proprietor "lay in a hammock like an Indian," and doubtless allowed his imagination free rein.

Then, with the arrival of the Dutch King, came the gates and rails of wrought iron and the clipped Yews and vegetable sculpture of the period. Sir William Temple's idea of a perfect garden was a flat or gentle declivity of an oblong shape lying in front of the house, with a descent of steps from a terrace extending the whole length of the house, this inclosure cultivated as a kitchen-garden and orchard; but this idea was viewed with contempt by such an enlightened observer as Lord Walpole, and soon the vegetables gave place to lawn and trees. Queen Caroline gave a still further impulse to the natural style, and winding waters were introduced into the scheme of Kensington Gardens. Pope and Addison ridiculed the formalities and clippings of their day, and little by little the emancipation of taste in England grew general. Pictures were studied by some to gain an idea of suitable composition; shrubberies were introduced; with winding walks along their borders; points of view were developed; some even went so far as to make their scenes emblematical of pastoral poetry, and even sentimental farms were attempted. Shenstone is said to have ruined himself in gardening at Leasowes, and broke his heart over his disappointments, and the echo of his taste is caught in his verse. Then came Kent, the landscape artist, who planned "Elysian scenes," shading in his more finished pieces with evergreens, and his successor, Wright, whose ideas were afterward developed by Beckford at Fonthill Abbey. Such was the craving for the improvement of grounds in England in the eighteenth century that there were not artists enough to direct the movement. It was by the exercise of imagination that English landscape-gardening progressed, now advancing and now retrograding, until it has come to stand as a synonym for what is picturesque and individual.

In our own country, young as it still is, there are splendid flashes of inspiration in this direction, which give promise of a time when our gardens will be in some adequate way an expression of the genius of the republic. Great object-lessons, like Central Park, the Boston Metropolitan Park system, the Columbian Exposition, and other realizations of a poet's dream, cannot fail to leave their effect upon a community. All great work in any art prompts individuals to original thought, and we need to give more rein to fancy in our own home arrangements, to think out for ourselves some scheme to be developed at leisure, and to profit by all such help as is offered by triumphs of landscape-art or the example of Nature in her most favorable moments.

It is far easier to fall into the mechanical than to rise to the imaginative style, and yet the latter, once attained, appeals so directly even to the uninstructed eye that it proves its right to a place among the fine arts. The same laws which govern composition of all kinds here are paramount and are equally imperative in literature, in painting and in landscape-effects. Simplicity, purpose, restraint, economy of means are the guiding principles of great art wherever it is to be found. If there is no meaning in what is done it soon grows wearisome. The commanding quality of the human mind is high imagination; this alone is not outworn by ephemeral fashions, and a great park which is born of such an inspiration will never cease to make appeal to our nobler faculties, and even a modest garden, if it expresses the best thought of its creator, will have a refining influence upon all who come under its spell.

Hingham, Mass. *M. C. R.*

The Box-elder and the Russian Mulberry.

IN traveling over the western plains it is observed that these two rapid-growing shade-makers are of the highest value for forest-planting, if each is kept in its appropriate latitude. Throughout Kansas, and more particularly east of the ninety-ninth meridian, the Russian Mulberry must become one of the most useful trees that grow, and this utility decreases rapidly as we go northward. In the southern counties of South Dakota it is worthless; whereas in the cold uplands of North Dakota the Box-elder is one of the hardiest of trees, and succeeds all over South Dakota and the greater part of Nebraska, but in Kansas, even toward its northern boundary, the Box-elder does less well, and on its southern border it is worthless.

The two trees have the two valuable qualities of rapid growth during youth and comparatively great shade endurance, and they are thus peculiarly fit for the important position of nurse-trees to species that demand more light. When planted with such species the Box-elder and Mulberry force them to grow tall and straight, with clean shafts.

At the South Dakota Agricultural College the Box-elder has been used as the dominant species in all successful plats but one, which was composed of hardwoods exclusively. In a plat of Box-elder with plants standing four feet apart each way, with every fourth tree a Burr Oak, the conditions at the end of the third year from planting approached those of an old forest. The Box-elder (five years from seed) formed a complete shade, and the young Oaks were completely overtopped by them. At the end of the fifth year from planting the Oaks had begun reaching up to the leaf-cover to get their share of light, the Box-elders now averaging fourteen feet high, the Oaks four feet, the tallest being eight feet two inches. It begins to look as if the lateral branches of the Box-elders that immediately surround the Oaks should be lopped; but the Oak has much shade endurance while young, and it may be able to overcome the Box-elder without assistance.

In mixtures of Box-elder, White Elm and Green Ash at this station, with the Box-elder dominant, the Elm at the end of five years begins to overtop the Box-elder a little, but the Ash hardly averages as high by a foot. Compared with pure Ash, those in this plat are fully two feet taller, the increased height being caused by the Ash reaching up for light between the dense shading Box-elders. The Ash is a light-demanding tree, and so is the Elm.

In a mixture of Box-elder, White Pine and White Birch, the Box-elder is not useful, as in five years it has so overtopped the Birch as to have suppressed and killed it. The White Pine was a failure.

An attempt was made in one plat to alternate Populus Certinensis, a Russian Poplar, with Box-elder as dominant forms mixed with Elm and Ash. The Poplar failed; the Ash and Elm, not growing as rapidly nor as dense as the Box-elder, did not shade the ground, so that weeds and grass have sprung up and the mixture is a failure. This plat is valuable as illustrating the necessity of making the greatest proportion of the plat good dense shade making kinds.

There is no other place in the west, so far as I know, where systematic attempts at mixed planting have been made, and hence no place is known where the Russian Mulberry has been used as a nurse-tree. In Brookings it forms a shrub that kills back badly every winter, but in Hutchinson, Kansas, specimens were seen which had grown from seed planted seventeeen years ago, and they are now ten inches in diameter three feet from the ground and forty feet high. The pure plats of this tree prove it a dense shade-maker. From this it is inferred that in Kansas it will prove quite as useful as a nurse-tree as the Box-elder has proved in South Dakota. Good specimens of it were found in all parts of Kansas, and throughout Nebraska south of the sand hills, and in irrigated land near Denver, Colorado.

Washington. *Charles A. Keffer.*

Foreign Correspondence.

London Letter.

ORCHIDS and Chrysanthemums are the principal attractions in the indoor garden at this time of year. Outside there is nothing except berries of various kinds, a few late autumn-tinted leaves and here and there a straggling Rose or Chrysanthemum. There is, however, one shrub of exceptional interest now, namely, Pernettya mucronata, and its varieties. We have two large beds of them in a conspicuous place on a lawn, and they are now heavily laden with berries of the most vivid colors—crimson, magenta, red, pink, violet, china blue and creamy white. This year they are better than I have ever seen them at Kew. Some well-berried branches of them were exhibited last week and they attracted a good deal of attention.

In my last letter I noted the best of the Chrysanthemums shown at the Drill Hall. In this I will describe some of the best of the Orchids which formed a feature at the same meeting of the Royal Horticultural Society:

Epilælia Hardyana.—A bigeneric hybrid was shown under this name last week by Messrs. Sander & Co., who have raised it from Lælia anceps crossed with Epidendrum ciliare. It will have an interest for systematic botanists, as it proves the near relationship of Epidendrum to Lælia, and, of course, to Cattleya also. Indeed, Reichenbach did once merge Cattleya in Epidendrum. The present subdivision has its advantages horticulturally, but it is as well that we should recognize the fact of the near consanguinity of Lælia to Epidendrum. As a garden Orchid, Messrs. Sanders' new hybrid is no great gain. It is more attractive than the Epidendrum, less so than the Lælia. The pseudo-bulbs are cylindrical, two-leaved, and the scape is erect, six inches long, with two flowers, each four inches across and formed of narrow spreading segments colored pale rose, with a tinge of buff. The lip is pale rose and folded over the column with a small wavy front lobe colored rich amethyst-purple.

Oncidium Wheatleyanum.—This new species was described in *The Garden* last year by the late Mr. W. H. Gower from a plant flowered by Mr. F. Wheatley, of Teignmouth, who had purchased it for Oncidium Gardneri. Last week Mr. Wheatley sent it to the meeting of the Royal Horticultural Society, where it was recognized as a distinct and beautiful Orchid, in the way of O. Gardneri. In general characters it resembles the last named species; the flowers, of which there are about thirty thickly set upon the spike, are each nearly two inches across, with ovate sepals, obovate wavy petals and a broad bilobed lip. The sepals and petals are colored a uniform bright chocolate-crimson; the lip is golden yellow margined with crimson, and there is a large blotch of velvety maroon spreading over the whole claw, the basal auricles being yellow. It is to be hoped that collectors will be able to find this plant in quantity, as it is a beautiful Oncidium, quite as beautiful as the rare O. Gardneri, which was first introduced from the Organ Mountains in 1846.

Catasetum Bungerothii.—The range of variation in this species is extraordinary. It is one of the largest-flowered and one of the handsomest of the many species of Catasetum now known, and since its introduction, some ten years ago, it has been the means of turning the attention of cultivators and collectors to this remarkable and interesting, but previously neglected, genus. Messrs. Linden, who have already figured and described in *Lindenia* several well-marked varieties of it, exhibited in London last week a group of splendidly flowered specimens which was truly astonishing to connoisseurs. Fully a dozen distinct forms were represented from the type, with its large, shell-like, creamy yellow lip three inches across, to others which in structure suggested the old C. macrocarpum. There were white, yellow, purple-tinged, red-spotted, green-tinged flowers among them, and some of the spikes bore a dozen flowers. The pick of them were named Lindeni, splendens regale, Luciani, aurantiacum and O'Brienianum. The species is a native of Venezuela.

Cymbidium cyperifolium.—A plant of this rare species was shown in flower last week by Mr. R. I. Measures, and obtained an award of merit. It is an ally of C. longifolium, and is characterized by linear, arching, bright green leaves two feet long, and a scape eighteen inches long bearing five flowers, each three inches across, with curved sepals and petals colored pale green, with red-brown lines, the lip being ivory-white, with dark crimson spots on the front lobe, and crimson parallel lines on the inside of the side lobes. Although described many years ago by Wallich, and apparently common in the subtropical regions of the Himalaya, it has somehow been missed by collectors, the only plant I remember of having ever seen being one at St. Albans a few years ago. Possibly this is the same plant. It is an Orchid worth popularizing, being elegant in foliage as well as attractive in flower, and it will, no doubt, be as easy to cultivate as its useful, good-natured relation, C. Lowianum, etc.

Cattleya labiata elegans.—This is a distinct addition to the numerous named varieties of this Cattleya. It has flowers of medium size, good in substance, ivory-white, with a dark purple lip margined with white. In effect it is not unlike the charming C. Rex. It was shown last week by a Cheshire amateur. There are many thousands of plants of C. labiata in flower now in the neighborhood of London alone. At Clapton, St. Albans and Chelsea the display made by its large richly colored blooms is a sight that would astonish Orchid-growers of a decade ago, whose houses in November were almost devoid of flowers. This Cattleya fills a large gap in the cooler houses, while in the warm house the queenly Dendrobium Phalænopsis plays an equally valuable part. These two Orchids should be in every garden where there are glass houses, whether Orchids generally are in favor or not.

Odontoglossum crispum F. Masereel.—Flowers of this extraordinary variety were shown last week in London by Messrs. Vervaet & Co., Ghent, and easily obtained a first-class certificate. It differs from all other named forms of this most variable Orchid in the color of its flowers, which have a groundwork of gray-white covered all over with large blotches of chocolate-red. The edges of the segments are very crisp, and there is a conspicuous blotch of yellow on the disk of the labellum. It is one of those Orchids which sell for sensational prices whenever they come into the market.

Pescatoreas.—Messrs. F. Sander & Co. are exceptionally successful in the cultivation of these plants, and they have a good collection of them in flower now, Pescatorea Dayana, P. Lehmanni and P. Klabochorum among them. The secret of their success is, so the cultivator told me, a shaded position in a hot moist stove, looseness at the roots, which revel in fresh sphagnum, and plenty of water always. "Water, water, water; that is the chief thing."

London. *W. Watson.*

Plant Notes.

The Garry Oak.

THIS Oak, Quercus Garryana, is a native of the Pacific slope, and reaches its greatest perfection in Oregon and Washington. It ranges through a wide territory, from the dry hillsides of the Cascade region, where it becomes more or less scrubby, to the wet bottom-lands of the region to the west.

The tree varies widely in form and habit, and the illustration (see page 495) shows what may be regarded as a good type, although there may be room for difference of opinion as to this. One frequently finds specimens, grown out in the open for a long time, with a very symmetrical, rounded form. But if, after arriving at a good age, a growth of Douglas Spruce springs up, the lower branches, being robbed of the light, will die and rot, leav-

ing what Professor Rothrock has called a broom-like top. This top will save the tree if the surrounding growth is not left too long, that is, not more than forty to forty-five years. If now the earlier conditions are restored, the branches become more or less pendulous giving the tree something of the appearance of the Elm. Such a tree is the subject of the illustration.

Fig. 78.—Quercus Garryana, the Garry Oak, in Oregon.—See page 494.

The bark is light gray, longitudinally, but not deeply, furrowed. The ridges thus formed are scarcely an inch broad, and are either not at all or, more commonly, irregularly furrowed transversely. It sometimes occurs that the transverse furrows are so regular and frequent as to give the bark a regular checker-board appearance.

The leaves are from two to six inches long. The lobes acute or obtuse, and in their shape fully agree with the popular idea of the Oak leaf. They are dark green and thick. The branchlets are rusty, with a close pubescence, and bear, when fruiting, one, or usually two or three, acorns three-quarters to one and a quarter inches long, and from five-eighths to seven-eighths of an inch in diameter, with a bloom. The cups, which are shallow, are more or less tubercled, sessile, or sometimes raised on a stalk about three-quarters of an inch long.

The wood has a beautiful grain, and is very valuable for interior finishing. It is said, however, that in drying it becomes brittle, and it is very liable to check badly. Only the greatest care in drying for a long period, two years at least, will obviate this fault.

The tree in the illustration is thirty-three inches in diameter and about seventy feet tall, a medium-sized individual.

Pacific University, Oregon. *Francis Ernest Lloyd.*

Quercus imbricaria.—The Shingle Oak, like most other Oaks, is rarely seen in cultivation, although it is perfectly hardy in this latitude. To the ordinary observer its oblong lanceolate leaves give little suggestion that it is an Oak, and, in fact, they bear a strong resemblance to those of the Laurel-leaved Willow. It likes strong soil, and in rich woodlands it not uncommonly approaches one hundred feet in height. When growing in the open ground, however, the branches of young trees have a droop somewhat like those of Pin Oak, and this gives it a graceful expression which is not found in most other species of the genus, which are rather dignified and strong than graceful. Mr. Joseph Meehan writes that the plants in Germantown from seed gathered near St. Louis are making a fine growth, and they excite much attention for their elegance of form and the shining beauty of their leaves. Like many other Oaks, this tree should be pruned back hard when it is transplanted, and the removal of trees ten or twelve feet high would be much more certain to be successful if the roots were pruned a year or two in advance by digging a trench in a circle about the tree and filling it in with good soil, to be occupied by new roots in place of the large ones which had been cut off. This Oak is often called the Laurel Oak, a name which properly belongs to Quercus laurifolia, a beautiful southern species.

Hypericum Moserianum.—Although this beautiful hybrid Hypericum has not proved perfectly hardy here in exposed places, it will be found to winter well in sheltered positions when protected with a light covering of dry litter. During severe winters it may be cut down to the ground, but it will begin to grow again in early spring with the greatest freedom. It gives a profusion of bloom during the summer and autumn months, and is undoubtedly one of the best of all Hypericums. It is shrubby and grows about two feet high; the flowers are three inches in diameter and are of a beautiful clear yellow color. It is easily propagated by cuttings made during early autumn and placed in a shady frame. It thrives best in a rather moist soil. This valuable plant was raised several years ago by Monsieur Moses, of Versailles, by crossing H. calycinum with the Japanese H. patulum.

Begonia corralina.—Under this name the largest of the shrubby Begonias, probably a variety of B. maculata, has long been known in English nurseries. In this country it has been oftener called B. rubra. Its principal variation from the type is seen in the leaves, which, in old plants, show none of the characteristic white spots, although these spots sometimes appear in the seedlings, neither has it the crimson-purple coloring on the under side of the foliage; the wings of the capsule are also nearly equal. It is a plant of luxuriant growth, with fine, bold foliage, and produces bright cherry-red flowers in the greatest profusion the year round. It grows well in large pots, but the best position is a border in the warm greenhouse, where it may be used to cover a wall or gable. The strong growths shoot up from the base of the plant like a Bamboo, and their height is only limited by the head-room. They branch naturally after attaining a certain size, but can be pinched in at any time. After the plant has become well established some of the older stems should be removed in spring, to make room for fresh growths. A rich mixture of rotted sod, leaf-mold and well-decayed manure, with a dash of sharp sand, is the most satisfactory soil for the plant. Its propagation is by seeds or cuttings of the stem, the latter method being preferable where a good variety is obtained.

Iris Vartani.—This plant flowers naturally at this time. While it is hardy here and will sometimes flower in the open under mild conditions, these are exceptional in December, and it is more successfully grown under protection. It is a bulbous Iris with netted white coats, from the vicinity of Nazareth. It has also the four-sided leaves, with horny points like those of Iris reticulata, but is distinct from this in the form of the flower. The flower appears when the leaves are three or four inches high and it is some three or four inches in diameter or spread, with a long tube. The falls have wide oval blades and narrow claws. Professor Forster dismisses this Iris very curtly in his *Bulbous Irises* as having a color of no great merit. This seems a hasty conclusion, as it is actually a flower of much beauty. Its general effect is light lavender-blue, produced by fine confluent lines of this color on a creamy white ground. An interesting feature of the coloring is the creamy buff ground of the under or outer sides of the blades. Professor Forster has also observed that this flower has no odor. Specimens sent to this office by Mr. Gerard are pleasingly fragrant, but this is not a material point, for flowers appearing in cold weather in the open border might be apparently scentless, as is the case with those of I. reticulata and others under these circumstances. Altogether this is a good plant for all who fancy out-of-the-way flowers and are willing to take the care required to properly ripen up the bulbs during the dark season. After flowering they should be kept growing in full light as long as possible After the foliage dies down the bulbs may be taken up, kept in a dry place and replanted in early autumn.

Cultural Department.

The Early Bearing of Orchard-trees.

In the eleventh annual report of the New York Agricultural Experiment Station it is stated: "With trees planted in the Station orchards when two or three years old, the first specimens of fruit have seldom been produced in less than eight years." The trial has covered a very large number of varieties of Apples, mostly of standard varieties, but including some "ironclads" of native origin, and a few of Russian origin. I think it would be interesting to contrast this experience with my own in an orchard of six hundred trees, about half of which were planted in the spring of 1889, and the remainder in the fall of 1890. Those first planted were a mixed lot of nursery-trees (all Russian sorts), three years old from the root-graft; and the second lot, nearly all of the Wealthy Apple. It will be observed that practically these plantings were two years apart—the second lot being set out in the fall of the second year, four years ago.

Now for their bearing. In 1893 the Duchess of Oldenburgh trees, Yellow Transparents and Longfields matured from one or two up to twenty or more of perfectly well-grown fruits. There was also, here and there, a fruit or two on Tetofsky and Wealthy trees, although the latter were only planted out the previous fall. All of the land was plowed, but no manure was applied at the time of setting. The two previous years it had carried crops of Corn and Potatoes. The soil is gravelly loam, underlaid with hard brick-clay at a depth of about two feet, the property being an old dairy-farm, two miles east of Lake Memphremagog, and at least five hundred feet above its level. Between the rows, for the past two years, good crops of Potatoes and Beans have been grown, with clean culture. The trees set latest have fully doubled their diameter, and those set first have grown much more. Very few of those first set are less than eight feet high, while even the smallest trees among the Wealthys measure nearly seven feet. The latter set quite full of fruit last spring, and an attempt was made to shake it all off, but over a barrel was gathered in the fall.

Of the older setting in this orchard the Oldenburghs were heavily thinned, yet they matured about two dozen apples to a tree. The Yellow Transparents gave an average of half a bushel to the tree, after heavy thinning; while the Russian "Longfields" (twenty-four trees) ripened between six and seven barrels, although subjected to several severe thinnings. Nor was any of this at the expense of proper wood-growth. On the contrary, the trees have apparently doubled in size the past season. Aside from the purposely stripped Wealthys, every tree produced heavily. Some forty Russian Plum and Cherry trees, from Professor Budd, of Iowa, three and four years planted in this orchard, produced more fruit than a family of seven could use, and a little of it was sold.

I send these notes mainly to show the combination of vigor and precocity of these Russian tree-fruits as compared with standard Apples in the orchards at Geneva. I have no Apples

of western Europe, or their American seedlings, to compare them with, for the simple reason that they will not endure our severest winters.

Newport, Vt. *T. H. Hoskins.*

[We have received photographs taken from several positions in these orchards, and they fully establish the correctness of Dr. Hoskins' statements as to the size, vigor and productiveness of these young trees.—ED.]

The Ferrocyanide Test for Bordeaux Mixture.

IN the issue of GARDEN AND FOREST for November 14th, Mr. Lodeman, of Cornell University, reports a rusty appearance of apples and pears sprayed with Bordeaux mixture made by the ferrocyanide test. I wish to add my belief to that expressed by Mr. Lodeman that the mixture made by this method should be more carefully tested, at least, before it is recommended for use in orchards. I have given it a thorough trial in spraying Potatoes, and have seen no injury whatever resulting from very heavy applications of it, and have, therefore, no hesitation in sanctioning its use in the Potato-field. As used this past season in our orchards, however, it did cause some injury of the nature described by Mr. Lodeman, so that some of the fruit dropped from sprayed Pear-trees in June, and both apples and pears showed some rusty or russetted appearance. We were able to trace this trouble largely to a single application—the first one made after the fall of the blossoms, when the young fruit was setting. The fruit showed signs of the injury within a few days after the application was made. Moreover, this application was omitted on one tree, and, although the tree was sprayed both before and after this time exactly as were the others, the fruit upon it was almost free from these blemishes. A further interesting indication of the same fact lay in the location of the rusty appearance. In most of the apples it formed a zone about midway between stem and blossom ends. The smooth skin on either side of this zone was evidently that which developed after this early application, and it remained unaffected by the later sprayings, although they were equally thorough. So far as can be judged from Mr. Lodeman's article, the injuries he reports came largely from the applications made at about this period. I would, therefore, suggest that especial care be taken not to use too strong or too liberal a spray just as the young fruit is forming. I trust, however, that these notes will not deter any one from using Bordeaux mixture on his fruit-trees. The scab fungus was much less injurious than usual upon both our apples and pears this year, yet, even under these conditions, the value of the crop from some varieties of our Apples was nearly doubled by spraying. The results upon Flemish Beauty pears were even more gratifying. Upon the unsprayed trees every pear was scabby, less than one-half of them could be rated as No. 1, and these were of inferior quality. On the sprayed trees scarcely a scabby pear could be found; on the average only six pears per barrel were sorted out as not being No. 1. Moreover, this No. 1 fruit was so much superior to the No. 1 fruit of the unsprayed trees that a practical fruit buyer offered fifty per cent. more by the barrel for the former than for the latter.

Vermont Experiment Station. *L. R. Jones.*

The Cultivation of Strawberries.

A BULLETIN which has just been issued by the Ohio Agricultural Experiment Station contains some excellent cultural directions as to selection and preparation of the soil, time and method of setting the plants, and other details in which novices, and many who are not novices, need instruction. We give in a condensed form some of the directions on a few points which are less frequently discussed than others:

Most varieties of Strawberries fruit more abundantly the second season than the first, and the berries are correspondingly smaller. For home use it is not a matter of importance as to the length of time a bed is kept, but for market there is seldom any profit in keeping a bed of any of the prolific medium-sized sorts more than one season. It usually costs less to plant a new bed than to clean out an old one, and it is much easier to keep a new bed clean. The earliest berries came from old beds, but they are smaller, and the fact that they are nurseries for insects and diseases condemns them. In treating an old bed many practical growers mow the tops off the plants and burn over the bed when they are dry. This is the best possible way of checking rust. Straw and leaves used as mulch should be raked into the centre of the rows before burning when there is danger of injuring the plants by too great heat. After burning, the ground between the rows should be kept thoroughly worked.

Winter protection should be given, not to keep the plants from freezing, but to prevent them from heaving and to retain moisture in summer and to keep the berries clean. Early winter is the best time to apply it. Straw is objectionable because of grain and weed seeds, which it contains. The best material is marsh hay, which is free from foul seed and is not easily blown off. It is not advisable to remove this mulch in spring either to avoid early frost or to cultivate, unless the bed is very weedy.

The proper proportion of perfect and pistillate flowered sorts to plant is an open question. Varieties and seasons have, perhaps, much to do with the matter, and no definite rules can as yet be given. One of the pollen-bearing sorts in every five plants is usually sufficient, and it is well to mate the two classes as to time of blooming, color, size and firmness of fruit as nearly as possible. The most prolific sorts are found among those which have imperfect flowers, although many of this class are not prolific. The best of the imperfect-flowered varieties are better than the best perfect-flowered varieties as to prolificacy, as to freedom from disease and general reliability. Many perfect-flowered kinds bloom as freely and set as many berries as any of the other class, but they are more apt to succumb to drought and unfavorable influences—that is, they are not so likely to carry a crop through to perfection as those that bear no pollen. This fact is so well understood that the general custom is to plant as few as possible of the perfect-flowered kinds, and the numerous inquiries after reliable varieties of this class show that something better than we now have is wanting.

The Cultivation of Violets.

VIOLETS grown entirely in cold frames will now require considerable care to insure a supply of flowers during the winter months. If leaves have not already been packed about the frames for additional protection, this should be done at once. A litter of manure, straw or hay affords fairly good protection, but none of these keep out cold as well as leaves, and they are all less tidy-looking. If a frame is properly packed with leaves and protected with mats and shutters a temperature of zero or lower can easily be resisted. Instead of straw mats we use those made of Singapore-fibre. They cost but little more than the straw mats, are slightly heavier, and far more durable. They are impervious to moisture, and mice do not gnaw and destroy them. The mats we have used for three winters are but little worse for wear, and cared for properly should last eight to ten years. Snow should not be allowed to remain over the panes longer than twenty-four hours at a time if it can possibly be avoided; the plants need all the light and air they can get during the dark months, and if the frames are covered over for a week or ten days at a time the plants suffer greatly. Mold will quickly spread among the crowns and the leaves become weak and spindling. The plants ought to be picked over once a week, and any diseased or decaying foliage removed. If any green slime appears on the surface of the beds it should be scratched over.

The Lady Hume Campbell Violets are entirely free from spot this season, and this variety seems equally clean in other places. It does not, however, bloom as freely as the Marie Louise at this season of the year, and the flowers, while of good size, are somewhat paler in color than those of Marie Louise. Swanley White is also free from spot, but we have had some little trouble with this disease on Marie Louise, and especially on lifted plants. The plants grown in frames during the summer have made the most vigorous and the healthiest plants. As a remedy for spot we have used Fir-tree oil once a week with good results. A small handful of salt is mixed in each twelve-quart can of the Fir-tree oil mixture, and the application is made about midday, while the sun is shining full on the plants.

We find that our plants at this season dry out sufficiently to take a moderate watering once a fortnight, but they will need less water from now until the end of January. The water should be tepid, and should not be poured into the crown. The watering should be done early enough in the day for the foliage to become quite dry before nightfall, and air should be admitted on every favorable opportunity. It is better to ventilate even when the outside temperature is several degrees below freezing point, if the sun shines on the frame, than to keep the frame closed, and run up the temperature with an idea of forcing the blooms.

Taunton, Mass. *W. N. Craig.*

December Notes.

THE last Crocus has but lately disappeared from the garden, which now shows life only in the progressive foliage of early spring-flowering plants. December is the month in which the amateur gardener can secure his most perfect rest, even if there be a greenhouse to care for. If this house is a small one it requires little attention, when many plants move very slowly under the dull skies and short days of the season. Low fires and plentiful supplies of air save much work under glass. Evaporation is slow and insects do not increase very fast, and a few moments' work after breakfast suffices to keep plants in fair order. It does not seem to me that the pursuit of pleasure should commence before breakfast.

The prompt replies to my request for cultural details of Gloriosa superba (see page 426) interested me very much, not only by the information, so clearly conveyed, but because it was an instance of the differing conditions under which flower-growers are working in various sections. Here is a plant which makes great tubers in the open in Florida, and requires a tropical stove in Massachusetts. Surely we are justified in trying more than one treatment to any single plant, and the rule of "supplying natural conditions" does not invariably give best results. Why should they? Have we not often found that foreign weeds which have become naturalized here grow stronger than they do at home?

When one opens wide the greenhouse ventilators in late May, and only closes them again in September, I fear that the plants which require niceties of treatment must suffer. It is in such cases that we amateurs are constrained and forced to be content with inferior or uncertain results. Summer-growing tropical plants are always uncertain under my system of free ventilation, yet there will always be some successes in our collections. This season the Calanthes are doing well, though the Gloriosas, which I suppose require about the same temperature, have failed.

During this month one can keep the greenhouse gay with Paper-white Narcissus, Roman Hyacinths, Freesias, which do not require much urging, and there will always be stray plants in flower, and the list of these will increase as the days lengthen and a higher temperature is maintained.

Elizabeth, N. J. *J. N. G.*

Late Chrysanthemums.—Philadelphia growers have found Mont Blanc one of the very best late white Chrysanthemums for profit. Of the pink varieties Mrs. Charles Dissel has not yet been surpassed by any of its color. Eva Hoyt continues among the most satisfactory of the late yellow kinds, and my judgment is that it will not be superseded soon. All these plants have been in cultivation for many years, but they hold their ground well. Last year the variety Challenge was sent out by Messrs. E. G. Hill & Co., and it gave promise of taking the lead among late yellow plants. It is a noble flower of first-rate color, and is very late, but it has the bad habit of shedding its terminal buds, a peculiarity that I have never observed in any other Chrysanthemum. I tried many of the new white and pink varieties sent out last year, and said to be late, but they all bloomed with the ordinary mid-season varieties. Two years ago I raised a plant which I named Mrs. Thomas Cartledge. It carries a large white flower, incurved, and of perfect form, and it has so far been one of the latest on the list. I have not put it in commerce yet, for I want the experience of another year or two to prove that it really is what I hope it is. Another late variety I have named "After the Ball." Its natural time of flowering is the first of December. It is a large incurved blush-white variety, but it shows the eye. This variety is not in commerce.

Philadelphia, Pa. *W. K. Harris.*

Correspondence.

A Robust Pin Oak.

To the Editor of Garden and Forest:

Sir,—In the meadow in front of my house, thirteen miles from Philadelphia, is a Pin Oak, Quercus palustris, that has retained its green foliage in a rather unusual manner this year. About the 14th of October the Oaks in this locality had made some progress toward a change of color, and two weeks later (28th) the glory of the autumn coloring was at its height; this particular Pin Oak, however, retained a bright green foliage. Three weeks after the first changes (November 4th) the other Oaks had mostly lost their bright colors, but this one was still green, with only the outer leaves a little brown, and now, two weeks later (18th), it is more green than brown, although the latter shade is very apparent.

It would be interesting to know by what power this particular tree has retained its green, when three other Pin Oaks near it colored three or four weeks earlier, and have lost nearly all their foliage; it is true that the latter in their early change took on a brighter coloring, but the former, with its deep green leaves, stood in marked contrast with all the other trees in the landscape, except the Junipers. There have been numerous frosts, and the thermometer has registered as low as twenty-eight degrees. The tree is not in an especially protected location, but it is a perfect type of its species, of medium size and age, and beautifully symmetrical.

Saint David's, Pa. *Henry Trimble.*

[Individuals of nearly all species of trees vary more or less in the way their leaves change color in the autumn and in the time of shedding them, and such individual peculiarities are often constant from year to year. As we have often insisted, gardeners should take advantage of them, and propagate trees and shrubs for ornamental planting with reference to the brilliancy of the autumn coloring of their foliage. In a group of Pin Oaks, for example, an individual, such as our correspondent describes, retaining its green foliage after the other trees in the group had become scarlet, would add greatly to the beauty and interest of the plantation. This is a subject of much importance to landscape-gardeners and one that is full of possibilities, although we have yet to learn that it has received any attention from them or from the superintendents of public parks.—Ed.]

Chrysanthemums Naturally Grown.

To the Editor of Garden and Forest:

Sir,—Mr. Watson, in his London letter, referring to some specimen plants of Chrysanthemums exhibited at the Crystal Palace show, says: "As examples of exceptional skill they were the feature of the exhibition, but in a picturesque sense they were excessively ugly." A gentleman at the Boston exhibition remarked of the groups of trained plants, "Fine plants, but horrid." Both gentlemen stand high in the profession—one is a practical gardener, the other a much-traveled and scientific authority.

Now, it is worth while for gardeners to analyze such judgments and see exactly what they mean. Probably the underlying assumption is that specimen plants, if grown naturally, would be less formal and more artistic. Mr. Gerard has frequently, in your columns, urged the claims of Chrysanthemums "naturally grown," whatever that may mean. It is hard to imagine any one becoming enthusiastic over bare-legged plants shivering in a frosty morning, with their heads hanging down out-of-doors. One would rather see them in congenial quarters, even if it is not perfectly natural to cover them up.

I have grown a few specimens every year without stakes. They were neat little plants of varieties suitable for this purpose. I have observed visitors of an artistic and critical turn go into raptures over them, but the fact is that they had not been left to nature; they had required and received just as much care and skill in cultivation as the most severely trained plants. They had been carefully pruned into shape, and kept so by intelligent stopping, so that they were well-balanced and quite globular in outline. If I had left them or any of the general run of varieties grown out-of-doors as bush-plants, without any training or handling, they would have been twisted and blown out of all form and comeliness, more natural, perhaps, but unsightly enough, especially after they had lost half of their leaves from insect and fungous attacks.

If societies will offer prizes for so-called natural plants they can have good exhibitions of Chrysanthemums without stakes, but the best ones will be grown with as much care and skill as the most artificially trained varieties. If staked specimens are to be grown they certainly ought to be grown well, and at the late Boston show the prize did not go to the biggest plants, but to the most highly finished plants. If natural specimens are called for, the best ones will show to the instructed eye that they have had as much thought and attention as if they were staked and tied to the last degree. It is skill which counts in gardening, and the man who is sufficiently expert to grow first-prize trained plants will probably stand abreast of any who grow first-prize natural plants.

"Natural" is a convenient word to use when we wish to discredit skill; but nature has just as much to do in producing staked plants as in producing good natural plants, so called. Nature supplies the vital force—man directs it in either case.

Boston, Mass. *R. P.*

Climbing Roses in California.

To the Editor of GARDEN AND FOREST:

Sir,—The thornless Banksian Roses, being of rather a tender constitution and not well adapted to greenhouse culture, are rarely seen in northern latitudes. But there are three varieties of them quite generally cultivated in California and popularly known as the white, large yellow and the small yellow. The habits of these three are so nearly alike that they can only be distinguished by the flowers. Those of the white and small yellow varieties are here about the size of twenty-five-cent pieces, and those of the other yellow are as large as a half-dollar. In spring they are borne in such abundance that they fairly hide the bright green foliage of the plants. Half a dozen or more pedicels spring from the same base, each bearing a very double flower, and altogether forming a cluster like the blossoms of a Cherry. The odor of the white flower strongly resembles that of Violets, but the yellow flowers have little scent. These Banksian Roses are vigorous and rampant growers. On either side of the porch of Mills College, near Oakland, California, one of these white flowering plants was set out in 1872, and one of them now has a girth at the ground of forty-four inches, while the other measures forty inches. One of them divides into eleven branches and the other into ten, and at the height of two feet from the surface these branches have an average diameter of three inches. The college building is sixty feet high, but the plants have reached the cornice, and I lately saw a young lady reach out of the fourth-story window and cut off a branch of this season's growth, which measured fifteen feet in length. How much was left on the parent stem could not be determined, as it came out of a dense mass of foliage some distance below. A few years ago the growth made by a branch in one year measured thirty feet, and it is easy to believe that, if proper support were furnished, these Roses would reach a height of at least one hundred feet.

On the grounds of the same college is a so-called double white Cherokee Rose, a relative of the Banksians, but larger in flower and not entirely devoid of thorns. Its age is unknown as it was on the grounds when the college was built in 1871. An arbor was built by its side twenty feet in diameter, and from this its long shoots droop like those of a Weeping Willow. At the ground this tree has a girth of fifty inches, and one of the nine branches into which it divides measures nineteen inches in circumference a foot beyond where it leaves the parent stem.

Fruitvale, Calif. *H. G. Pratt.*

Recent Publications.

Riverby. By John Burroughs. Houghton, Mifflin & Co., Boston and New York. 1894.

To this book, which, according to the preface, contains Mr. Burroughs' last collection of out-of-door papers, he has given the name of his place upon the Hudson, Riverby, where the sketches were written, and where for so many years he has been closely watching the life of nature, which, with the changing seasons, has ebbed and flowed past his door. Most, if not all, of the papers have been published from time to time in various periodicals, but even if they now for the first time saw the light of day, Mr. Burroughs' method of treating the varying features of rural life is too widely known to need more than a word of comment.

Perhaps it should be observed that the work ranges on a less elevated plane than that occupied by Thoreau or Jefferies, neither of whom Mr. Burroughs fully appreciates. He does not seem to understand the high moral purpose which drove Thoreau into the wilderness, and which, reflected in his writings, made them almost as strong a moral tonic to the readers of his generation as the Westminster catechism had been to an earlier one. Nor does he appear to have much sympathy with the almost tropical fervor of passion which throbs through every line of Jefferies' records of nature. Perhaps he has best characterized his gift and its limitations when he speaks of himself as an "interested spectator of the life of nature." Thus his work appeals to the intellect and the artistic sense rather than to the higher spiritual faculties. This, however, does not detract from its value within its special field, and for years he has been the most popular, as he is, perhaps, the most trustworthy, of the many amateur naturalists, whose aim is not so much to give information upon their special hobbies as to awaken the enthusiasm of others in their chosen pursuits. Thus they attempt to intermingle something of human interest with their records of the wild life of wood or meadow, or to enhance the value of their narrative by some special grace of style and charm of poetic feeling.

To a man who writes under such conditions there must come from time to time the temptation to sacrifice scientific accuracy to beauty of style. But from this temptation Mr. Burroughs seems to be singularly free; nor does he often yield to that other temptation to adorn his tale by some apposite reflection because his readers may expect it of him. His knowledge of the subjects of which he treats, though neither deep nor profound, is singularly varied, and, within certain limits, accurate. It has been obtained by long years of patient and loving observation of rural life in all its phases; thus he is able always to write as if with his eyes upon the object. His frank confession of ignorance of a new flower, the name and habits of which would be known at a glance by an experienced botanist, betrays his lack of scientific training; but, on the other hand, of this flower, and of all its kin, Mr. Burroughs can write with a delicate and tender grace that gives delight to hundreds of readers for whom the formal description of the botanist would have no charm. It may be because of this very lack of scientific knowledge that Mr. Burroughs seems to many a veritable high-priest of nature, standing upon the threshold of the temple to reveal the way to the treasures which are enclosed therein. Nor should it be forgotten that his many sympathetic descriptions of Nature's beauty, his bright narrative of bird and animal life, seem to bring the breath of the fields and woods into the den of tired workers, and to the couch of weary invalids. One of the most attractive papers in this volume, "Prairie Notes," is made up almost entirely of extracts from letters written by an invalid lady "confined to her room year in and year out," but who has yet found in this limited space more of interest to see and record than many who have the freedom of a continent; and certainly the record of the very peculiar manners of her bird visitors makes most delightful reading.

Other papers are simply records of wanderings through the Heart of the Catskills and Mammoth Cave and the Kentucky Blue Grass regions. The sketches entitled "Birds' Eggs" and "Bird Courtship," although hackneyed in subject, are delightfully fresh in treatment. "Glimpses of Wild Life" and "Eye Beams" will give pleasure to all lovers of wild creatures, furred or feathered; and "Bird Life in an Old Apple-tree" has many touches of bright humor. "Hasty Observations" and "Talks with Young Observers" are full of helpful suggestion, and should be read carefully by all those who, not content always to use Mr. Burroughs' trained spectacles, feel a praiseworthy desire to see nature through their own eyes. "Lovers of Nature," the most thoughtful of the essays, makes clear the distinction between the reporter of nature, who simply sees things in detail and enumerates them, and the true observer, who, in the multiplicity of details, lays hold instinctively upon those which are significant, disentangles the threads of relations and distinguishes the typical and vital from the mechanical and commonplace.

It may be that there is in these papers a little less of freshness—a little lack of the spontaneity which gave such a charm to Mr. Burroughs' early writing; as if, for priest as for layman, there come days when Nature has no word for her worshiper, and the glamour which lay so long on earth and sky had faded into the light of common day. But the record of such moods are few and slight, and do not detract from the wholesome purpose of the book, which, perhaps, may be best expressed by the following quotation:

We cannot all find the same things in Nature. She is all things to all men. She is like the manna that came down from heaven. "He made manna to descend for them, in which

were all manner of tastes, and every Israelite found in it what his palate was chiefly pleased with. If he desired fat in it, he had it. In it the young men tasted bread, the old men honey, and the children oil"; but all found in it substance and strength. So with Nature. In her are all manner of tastes—science, art, poetry, utility, and good in all. The botanist has one pleasure, the ornithologist another, the explorer another, the walker and sportsman another; what all may have is the refreshment and exhilaration which come from a loving and intelligent scrutiny of her manifold works.

Notes.

Parts 106, 107 and 108 of Engler & Prantl's *Die Natürlichen Pflanzenfamilien* have lately reached us. They contain the completion of Cactaceæ, by Schumann; the elaboration of Geissolomaceæ, Penæaceæ, Oliniaceæ, Thymelæaceæ and Elæagnaceæ, by Gilg; Gesneriaceæ and Columelliaceæ, by Karl Fritsch, and the Bignoniaceæ, by Schumann.

Since the first pages of this issue went to press we have received from Mr. Michael Barker a description of Iris Vartani, which is now in flower at the experiment-station gardens in Ithaca. The bulbs were received from Mr. W. A. Manda, potted late in October and placed in a cool, though sunny, greenhouse. These flowers, like those sent here by Mr. Gerard, and noticed on page 496, exhale a very distinct and pleasant odor.

Four car-loads of fruit from California last week must come very near to finishing the shipments of fresh fruit across the continent. Emperor grapes are still abundant. California quinces of excellent quality may be had, and strawberries are so plentiful that they are sold on the street-stands at fifty cents a box. Kumquats, from Florida, bring twenty-five cents a dozen, and garden pineapples, from Florida, are $1.00 apiece. Large ripe grape-fruits sell at $2.00 a dozen, and Spanish pomegranates, of as good quality as they are ever seen here, can be had for a dollar a dozen.

Among the large variety of pears now offered in this city is Forelle, or German Trout, from California, a showy, late pear, long and slender in form. Others are the perfumed Bosc, with its bright bronze, almost golden color; the greenish yellow Comice, with its russet dots; the lemon-yellow Beurre Diel; the fine-grained, buttery Winter Nelis; the white-fleshed Virgalien and the juicy and aromatic little Dana's Hovey, the quality of which is so exquisite that the best of them cost as much as those three times as large. Besides these there are the Sheldon, Clairgeau, Glout Morceau, Anjou, Lawrence and many more, since cold storage makes it possible to keep the autumn varieties well into winter.

To a correspondent of *The American Florist*, who complains that apparently healthy plants of the white-flowered Swainsonia galegifolia drop nearly all their buds before they open, Mr. Edwin Lonsdale replies that these plants resent overfeeding with liquid fertilizer. When the soil is at all rich even small amounts of weak manure-water cause the flower-buds to drop. What they need is liberal root-room and a porous, or, at least, a well-drained soil. Mr. Lonsdale tells florists that the flowers of Swainsonia, above those of almost any other plant, ought to be cut some time before they are placed in the hands of retail customers. If cut and placed in a dark refrigerator or cellar until thoroughly cooled and filled with moisture they will last for a long time.

A correspondent of the *Gardeners' Chronicle*, in writing about the Coreans, whom he considers intellectually a sort of inferior Chinamen, says that they by no means neglect flower-gardening. A pond thickly set with Lotus is the most common form of decorative planting practiced by them, but the Chrysanthemum is also grown to perfection, and a festival in honor of this plant is the most popular of their annual celebrations. Those who are able to do so, cultivate it under frames covered with oiled paper, which is an excellent way of getting good flowers. It is in comparatively recent times that European gardeners discovered the secret of growing large flower-heads by training plants to single stems and single flowers, but the Coreans have practiced this system for centuries.

Mr. Robert Douglas, writing to *Meehans' Monthly*, gives it as his opinion that climate has considerable to do with the fragrance of flowers, and that Mignonette, Roses and Azaleas, etc., are not as fragrant here as they are in England, and that they are not as fragrant in the western states as in New England. Carrying this theory a little farther, he observes that the White Spruce from Maine and Lower Canada has such a strong odor that it is called the Skunk Spruce, while the odor of the same tree in the drier atmosphere of Minnesota is not nearly as pungent, and this Spruce when found on the summit of Terry's Peak, in the Black Hills, exhaled no odor whatever, and Mr. Douglas was compelled to rub a twig with its foliage and bruise it in his hand before he could catch the distinctive smell.

The Trustees of the Missouri Botanical Gardens announce that there is a scholarship to be awarded in that institution before the first of April next. Preliminary examinations will be held on March 5th at the Botanical Garden, but persons who live remote from St. Louis can send their applications, and arrangements under certain conditions may be made for a competitive examination before the principal of some high school near the home of the applicant. All applicants will be examined in English grammar, reading, writing and spelling, arithmetic and geography, and, in case of a competition, in other studies, including history, literature, botany and physiology. Any one who cares to secure one of these scholarships or who wishes to enter the garden as a pupil without any of the special scholarship grants can find all the needed information by applying to Professor William Trelease, the Director.

Dr. J. H. Mellichamp, of Bluffton, South Carolina, sends us a note relative to a tree of the rare Ogeechee Lime, Nyssa Ogeechee, growing on high sandy land on the old Hardee plantation, near South May River, in Beaufort County, South Carolina, that was brought from the Ogeechee swamps by Mr. Hardee fifty or sixty years ago as a little tree, and planted in a Corn or Cotton field. "It seems remarkable," Dr. Mellichamp writes, "that this water-loving swamp tree should have so flourished in sandy land and attained such dimensions. It is now a beautiful, and, in some respects, a most peculiar-looking tree, and is in perfect vigor, looking as if it could live for a hundred years longer. Its height is supposed to be about thirty feet; the trunk girths six feet one inch at three feet from the ground, and at the height of seven feet divides into three very large limbs." This is certainly one of a very few plants of this rare species in cultivation, and perhaps the only one, although it is said to have been sent to Europe in 1806 by the English botanist, John Lyon.

Of the Chrysanthemums on sale in this city Mrs. Jerome Jones, Minnie Wanamaker and Niveum are the prevailing whites, and W. H. Lincoln and Dr. Covert the latest yellows. There are practically no pink or red varieties in commerce here. The best flowers of the large varieties bring fifty to seventy-five cents apiece. Crystal Wave, a small white Chrysanthemum, is among the latest, and is sold in sprays. Mr. Edwin Lonsdale writes from Philadelphia that Mrs. J. G. Ils, Mont Blanc, Mrs. H. H. Battles and Mrs. Thomas Cartledge are all proving good for late market flowers. The fact is that the operator can prolong the season of Chrysanthemums by judicious propagating, so that any of the mid-season varieties can be grown late, and any of the late varieties can be made to flower very late. The best American Beauty roses, with stems three to four feet long, bring at retail $1.50 each. Of course, this is for choice flowers, which always command high prices. Clusters of fifty of the best-grown Marie Louise violets sold last week for as much as $3.00.

We have received an interesting photograph of a Water-lily tank, in which four or five of the tropical Nymphæas are in bloom, and the buds show that many more flowers are to come. The photograph was taken on the 20th of November, and Mr. Rodolfus Bingham, of Camden, New Jersey, in whose residence the tank is built, states that the Water-lilies have been flowering since early in June. Some of the leaves are over sixteen inches in diameter, and the flowers seven inches across. What makes this pool of particular interest is that it is in an attic-garden, that is, in the third-story of a part of Mr. Bingham's dwelling-house, which has a glass-roof, and so far has only had the surplus heat from the rooms below. Abutilons, Ferns and many other plants in this room, which is twenty-eight feet by twenty in size, look very thrifty. For people who live in cities a conservatory on the roof is worth considering, from the fact that it receives the sun for an hour or two longer every day than it would on the ground. Mr. Bingham writes that by pressing a circle of fine wire between the petals and stamens of Nymphæa-flowers the day-blooming varieties can be kept open at night; but the suggestion of any such restraint laid on the habits of a flower is not altogether pleasant.